those reasonably anticipated for the Pebble prospect. In order to be a comprehensive and reasonable assessment of mining in the "Bristol Bay Watershed," the Draft Assessment must consider these other prospects and analyze how they may be developed within the existing Bristol Bay area planning process and according to the existing Alaskan permitting process. Instead, this information was completely ignored by EPA.

Still, this is not to say that an ecological risk assessment (ERA) or an SEA cannot be useful if conducted in accordance with an environmental impact statement prepared under NEPA on an actual project proposal. It seems that EPA set out to prepare a SEA but its preliminary report looks more like an EA. Most importantly, neither standard has been adequately accomplished here. To accomplish either, the process should be carried out to the same set of standards that an EA or SEA is expected to meet. Indeed, the EPA has issued guidelines to ensure that such standards are met in risk assessments. Primary among these guidelines are:

- *EPA's Guidelines for Ecological Risk Assessment* (April 1998) – establishing generic, science-based procedures for studies to evaluate "the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors."

- *EPA's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency* (October 2002) –containing EPA's policy and procedural guidance for ensuring and maximizing the quality of information it disseminates. The guidelines also outline administrative mechanisms for EPA pre-dissemination review of information products, and describe mechanisms to enable affected persons to seek and obtain corrections from EPA regarding disseminated information that they believe does not comply with EPA or OMB guidelines.

ERA, as described in these guidelines is intended to assist EPA managers in deciding whether risk mitigation measures are warranted given certain existing (or potential) stressors on an ecosystem, and what monitoring is required to determine whether the mitigation measures reduced risk or whether ecological recovery is occurring. In other words, ERA is primarily intended as a *planning tool*, not a project assessment tool. Thus, the Draft Assessment employs an assessment tool not really designed for its purpose. NDM strongly encourages EPA to reconsider its analysis through a proper project assessment tool like the rigorous review and approval process that Congress has set out for EPA's use under NEPA.

E. The Draft Assessment Did Not Adequately Consider Mitigation Efforts

NDM and PLP are acutely aware of the President's Council on Environmental Quality (CEQ) Guidelines as they relate to project development and mitigation, and have been from the earliest efforts to produce a viable project design that could be permitted. NDM and PLP have also been acutely aware of the requirements of the Clean Water Act (CWA) and all that it implies when it comes to environmentally responsible project development. EPA, on the other hand, has ignored the clear mandates of the CWA and the CEQ Guidelines in the production of its Watershed Analysis, both in the "no-failure scenario" and in the "failure scenarios". This

stark contrast in the basic assumptions surrounding project concepts, PLP on one hand and EPA on the other, is disturbing.

NDM and subsequently PLP have taken great pains over eight years to avoid as many environmental impacts of viable project development as possible. The project footprint has been adjusted many times and the sequencing of development of various project elements has been revised over and over to avoid and/or minimize impacts to local streams and wetlands. At no time did EPA demonstrate that it took account of any of these environmentally important design principles when coming up with its hypothetical mine concept. Further, PLP has taken great pains to design a transportation corridor that would avoid and/or minimize impacts to streams and wetlands, including incorporation of advanced approaches to stream crossings that would assure that bridges would be used wherever appropriate and that culvert design and placement would preclude failure either of the structures themselves or their abilities to provide unimpeded fish passage for all relevant species and life stages. Not only did EPA fail to incorporate appropriate road and pipeline design standards, but they assumed a failure rate that would never occur for any modern, well-designed, all-weather industrial road in Alaska, especially given today's stringent permitting requirements. PLP has always incorporated the *best* design and operational standards for physical project elements, such as tailings storage facility embankments, water treatment facilities (such as redundant, modular design) and site water collection and distribution systems. EPA's design and performance standards, as explicitly stated in their analysis were merely "good" as opposed to best; it seems this was necessary so that EPA could posit a series of still-unreasonable failures and by doing so, have something to analyze.

Another glaring lapse is EPA's failure to acknowledge and incorporate one of the most basic requirements of the permitting process: full, functional mitigation for all unavoidable, residual project impacts. PLP has consistently acknowledged its mitigation responsibility and has assumed that permit requirements would stipulate mitigation obligations amounting to a significant multiple of actual impacts, resulting in a net gain in anadromous and resident fish productive capacity (hence potential net gains to subsistence, commercial and recreational fisheries), as has been the case with other projects in Alaska. PLP has identified numerous opportunities for increasing anadromous fish habitat, as well as the productive capacity of that habitat for anadromous fish, greatly in excess of reasonably anticipated losses. Examples of such available opportunities include judicious water management, including storage, and strategic delivery of excess water to streams and aquifers *without* adverse impacts such as seasonally incompatible temperatures; providing access to existing but inaccessible aquatic habitats and creation of extensive new habitats such as groundwater-fed secondary channels for anadromous and resident fish spawning, rearing and overwintering in local floodplains; concentrating mitigation efforts in more heavily utilized lower portions of local watersheds (North Fork Koktuli, South Fork Koktuli, Upper Talarik Creek) in order to maximize actual use of new habitat by the fish for which it is intended. Offsite but in-watershed (Kvichak/Nushagak) opportunities include such things as fish passage at significant anadromous fish barriers, opening up very large areas to anadromous access, significantly increasing salmon runs in associated systems. More remote opportunities include facilitation of reclamation and rehabilitation activities in existing disturbed areas. EPA chose not to include any such mitigation approaches

in any of its scenarios, but rather to assume the persistence of unavoided and unmitigated adverse project impacts. This failure flies in the face of the CEQ Guidelines, requirements of the CWA, the large mine permitting process in place and familiar to all in Alaska, and is inconsistent with modern mining industry practices.

PLP has shared much of its mitigation approach, including specific examples of local and more remote mitigation opportunities, with EPA and other state and federal agencies of jurisdiction. EPA has apparently chosen to ignore these communications. On the contrary, the agency assumed in its mine development scenario that nothing meaningful would be done. This becomes apparent in EPA's own "no-failure" scenario, which assumes many significant unmitigated project impacts, to fish, their habitats and wetlands. The "no-failure" scenario assumes outright unmitigated loss of about 100 km of "potentially anadromous fish spawning and rearing habitat" within the project footprint. It assumes unavoided and/or unmitigated adverse temperature impacts associated with treated site water release. It assumes unavoided and/or unmitigated degradation of resident and anadromous fish habitat downstream of the mine development. It assumes unavoided and/or unmitigated adverse impacts of inappropriately designed culverts and road prisms, plugging and washout in spite of daily maintenance, fish migration blockage in spite of daily maintenance and road-derived chemical and sediment pollution to the extent that fish reproduction and survival would be compromised. It assumes unavoided and/or unmitigated fragmentation of wetlands along the transportation corridor and the cutting off of shallow groundwater to known spawning areas. No project with these fundamental design flaws and unmitigated residual impacts could ever be permitted in the State of Alaska, and further, no such project could be permitted legally elsewhere in the United States.

The upshot of EPA's failure to live up to its own agency mandates and governing law is that its mining scenario, and thus its own analysis, is unrealistic, unreasonable, un-permittable, and essentially illegal. Where PLP has given full consideration to the CEQ Guidelines in its project planning, EPA has circumvented or ignored them. Where PLP has sought to avoid impacts through project design, EPA has failed to do so. Where PLP has avoided risks associated with sub-standard design and implementation criteria, EPA has embraced them. Where PLP has sought to avoid and minimize potential project impacts on streams, wetlands and fish and other aquatic resources through strategic planning and effective project design, EPA has shown no appetite for such caution. Where PLP has developed detailed inventories of mitigation opportunities following CEQ and Clean Water Act hierarchies, EPA has essentially ignored this legal obligation. Where PLP is and has been going the extra mile to assure an environmentally responsible development, including full compliance with all relevant regulatory and permitting conditions, EPA has essentially ignored hierarchical mitigation requirements in the CEQ guidelines and flouted the CWA. EPA has spun out a mine concept scenario that would have no chance of achieving regulatory approval, and then assumed it would fail.

F. The Draft Assessment Includes Numerous, Serious Factual Errors.

Questionable reasoning, inappropriate comparisons, and ignored mitigation efforts aside, the Draft Assessment is also riddled with factual errors and internal contradictions that raise further concern about the validity of EPA's analysis. Moreover, the Draft Assessment raises